

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A method of treating a cervical intraepithelial neoplasia (CIN) in a human, the method comprising:

identifying a human an individual as being less than 25-30 years of age ~~or younger~~ and as having a CIN; and

administering to the human individual an effective amount of a pharmaceutical composition comprising a nucleic acid comprising a nucleotide sequence that encodes a hybrid polypeptide comprising an epitope of a naturally occurring human papilloma virus (HPV) protein

(i) at least one of the following segments of human papilloma virus (HPV) strain 16 E6:

AMFQDPQERPRKLPOLCTEL,

LLRREVYDFAFRDLCIVYRDGNPY, or

KISEYRHYCYSLYGTITLEQQYNK;

(ii) at least one of the following segments of HPV strain 16 E7:

TLHEYMLDLOPETTDLYSY,

QAEPDRAHYNIVTF, or

LLMGTGLIVCPICSQKP;

(iii) at least one of the following segments of HPV strain 18 E6:

RRPYKLPDLCTELNTSLQDIEITCVYCKTVLELTEVFEFAFK, or

SVYGDTLEKLNTGGLYNLLIRCLRCQK; and

(iv) at least one of the following segments of HPV strain 18 E7:

KATLQDIVLHLEPQNEIPV,

HTMLCMCCKCEARI, or

AFQQLFLNLSFVCPWC.

2-8. (Canceled)

9. (Currently Amended) The method of claim 1, wherein the CIN is cervical intraepithelial neoplasia 1 (CIN1)~~or low grade squamous intraepithelial lesion (LSIL)~~.

10. (Currently Amended) The method of claim 1, wherein the CIN is cervical intraepithelial neoplasia 2 (CIN2), cervical intraepithelial neoplasia 3 (CIN3), or cervical intraepithelial neoplasia 2/3 (CIN2/3), ~~or high grade squamous intraepithelial lesion (HSIL)~~.

11-42. (Canceled)

43. (Previously Presented) The method of claim 1, wherein the pharmaceutical composition comprises a microparticle.

44-72. (Canceled)

73. (New) The method of claim 1, wherein the hybrid polypeptide comprises the segments AMFQDPQERPRKLPQLCTEL, LLRREVYDFAFRDLCIVYRDGNPY, KISEYRHYCYSLYGTTLEQQYNK, TLHEYMLDLQPETTDLYSY, QAEPDRAHYNIVTF, LLMGTLGIVCPICSQKP, RRPYKLPDLCTELNTSLQDIEITCVYCKTVLELTEVFEAFK, SVYGDTLEKLTNTGLYNLLIRCLRCQK, KATLQDIVLHLEPQNEIPV, HTMLCMCKCEARI, and AFQQQLFLNTLSFVCPWC.

74. (New) The method of claim 1, wherein the hybrid polypeptide does not contain a sequence identical to the sequence of either full length, intact E6 or full length, intact E7 protein from HPV strain 16 or 18.

75. (New) The method of claim 1, wherein the hybrid polypeptide comprises a signal sequence.

76. (New) The method of claim 75, wherein the signal sequence is the HLA-DR $\alpha$  leader sequence (MAISGVPVLGFFIIAVLMSAQESWA).

77. (New) The method of claim 1, wherein the hybrid polypeptide comprises the amino acid sequence

AMFQDPQERPRKLPQLCTELLRREVYDFAFRDLCIVYRDGNPYKISEYRHYCYSLYGT  
TLEQQYNKTLHEYMLDLQPETTDLYSYQAEPDRAHYNIVTFLLMGTGLGIVCPICSQKPR  
RPYKLPDLCTELNTSLQDIEITCVYCKTVLELTEVFEFAFKSVYGDTLEKLTNTGLYNLLI  
RCLRCQKKATLQDIVLHLEPQNEIPVHTMLCMCCKCEARIAFQQLFLNLSFVCPWC.

78. (New) The method of claim 1, wherein the hybrid polypeptide comprises the amino acid sequence

MAISGVPVLGFFIIAVLMSAQESWAAMFQDPQERPRKLPQLCTELLRREVYDFAFRDL  
CIVYRDGNPYKISEYRHYCYSLYGTTLEQQYNKTLHEYMLDLQPETTDLYSYQAEPDRA  
HYNIVTFLLMGTGLGIVCPICSQKPRRPYKLPDLCTELNTSLQDIEITCVYCKTVLELTEVFE  
FAFKSVYGDTLEKLTNTGLYNLLIRCLRCQKKATLQDIVLHLEPQNEIPVHTMLCMCCK  
CEARIAFQQLFLNLSFVCPWC.

79. (New) The method of claim 1, wherein the hybrid polypeptide consists of the amino acid sequence

MAISGVPVLGFFIIAVLMSAQESWAAMFQDPQERPRKLPQLCTELLRREVYDFAFRDL  
CIVYRDGNPYKISEYRHYCYSLYGTTLEQQYNKTLHEYMLDLQPETTDLYSYQAEPDRA  
HYNIVTFLLMGTGLGIVCPICSQKPRRPYKLPDLCTELNTSLQDIEITCVYCKTVLELTEVFE  
FAFKSVYGDTLEKLTNTGLYNLLIRCLRCQKKATLQDIVLHLEPQNEIPVHTMLCMCCK  
CEARIAFQQLFLNLSFVCPWC.

80. (New) The method of claim 1, wherein the nucleic acid comprises a plasmid vector.
81. (New) The method of claim 1, wherein the nucleic acid comprises a viral vector.
82. (New) The method of claim 1, wherein the pharmaceutical composition comprises a microparticle having the nucleic acid encapsulated therein.
83. (New) The method of claim 82, wherein the microparticle comprises a copolymer of poly-lactide-*co*-glycolide.
84. (New) The method of claim 83, wherein the microparticle is less than 10 microns in diameter.
85. (New) The method of claim 1, wherein the pharmaceutical composition comprises an adjuvant.
86. (New) The method of claim 1, wherein the pharmaceutical composition is administered via injection.
87. (New) The method of claim 86, wherein the injection is intramuscular, subcutaneous, or intracervical.
88. (New) A method of treating a CIN in a human, the method comprising:  
identifying a human as being less than 25 years of age and as having a CIN; and  
administering to the human an effective amount of a pharmaceutical composition comprising a microparticle comprising a plasmid vector and a polymeric matrix, wherein the

plasmid vector comprises a nucleotide sequence that encodes a polypeptide comprising a signal sequence and the amino acid sequence

AMFQDPQERPRKLPQLCTELLRREVYDFAFRDLCIVYRDGNPYKISEYRHYCYS  
LYGTTLEQQYNKTLHEYMLDLQPETTDLYSYQAEPDRAHYNIVTFLLMGTGLGIVCPICS  
QKPRRPYKLPDLCTELNTSLQDIEITCVYCKTVLELTEVFEFAKSVYGDTLEKLNTGL  
YNLLIRCLRCQKKATLQDIVLHLEPQNEIPVHTMLCMCKCEARIAFQQFLNLTLSFVC  
WC.

89. (New) The method of claim 88, wherein the CIN is CIN1.

90. (New) The method of claim 88, wherein the CIN is CIN2, CIN3, or CIN2/3.

91. (New) The method of claim 88, wherein the polymeric matrix comprises a copolymer of poly-lactide-*co*-glycolide.

92. (New) The method of claim 89, wherein the polymeric matrix comprises a copolymer of poly-lactide-*co*-glycolide.

93. (New) The method of claim 90, wherein the polymeric matrix comprises a copolymer of poly-lactide-*co*-glycolide.

94. (New) The method of claim 88, wherein the pharmaceutical composition is administered via injection.

95. (New) The method of claim 94, wherein the injection is intramuscular, subcutaneous, or intracervical.

96. (New) The method of claim 89, wherein the pharmaceutical composition is administered via injection.

97. (New) The method of claim 96, wherein the injection is intramuscular, subcutaneous, or intracervical.

98. (New) The method of claim 90, wherein the pharmaceutical composition is administered via injection.

99. (New) The method of claim 98, wherein the injection is intramuscular, subcutaneous, or intracervical.

100. (New) A method of treating a CIN in a human, the method comprising:  
identifying a human as being less than 25 years of age and as having a CIN; and  
administering to the human an effective amount of a pharmaceutical composition comprising a microparticle comprising a plasmid vector and a polymeric matrix, wherein the plasmid vector comprises a nucleotide sequence that encodes a polypeptide comprising the amino acid sequence

MAISGVPVLGFFIAVLMSAQSWSAAMFQDPQERPRKLPQLCTELLRREVYDFA  
FRDLCIVYRDGNPYKISEYRHYCYSLYGTTLEQQYNKTLHEYMLDLQPETTDLYSYQAE  
PDRAHYNIVTFLMGTLGIVCPICSQPKPQQPYKLPDLCTELNTSLQDIEITCVYCKTVLEL  
TEVFEFAFKSVYGDTLEKLTNTGLYNLLIRCLRCQKKATLQDIVLHLEPQNEIPVHTMLC  
MCKCEARIAFQQFLNLSFVCW.

101. (New) The method of claim 100, wherein the CIN is CIN1.

102. (New) The method of claim 100, wherein the CIN is CIN2, CIN3, or CIN2/3.

103. (New) The method of claim 100, the polymeric matrix comprises a copolymer of poly-lactide-*co*-glycolide.

104. (New) The method of claim 100, wherein the pharmaceutical composition is administered via injection.

105. (New) The method of claim 104, wherein the injection is intramuscular, subcutaneous, or intracervical.

106. (New) A method of treating a CIN in a human, the method comprising:  
identifying a human as being less than 25 years of age and as having a CIN; and  
administering to the human an effective amount of a pharmaceutical composition comprising a microparticle comprising a plasmid vector and a polymeric matrix, wherein the plasmid vector comprises a nucleotide sequence that encodes a polypeptide consisting of the amino acid sequence

MAISGVVPVLGFFIIAVLMSAQESWAAMFQDPQERPRKLPQLCTELLRREVYDFA  
FRDLCIVYRDGNPYKISEYRHYCYSLYGTTLEQQYNKTLHEYMLDLQPETTDLYSYQAE  
PDRAHYNIVTFLMGTGLGIVCPICSQKPRRPYKLPPDLCTELNTSLQDIEITCVYCKTVLEL  
TEVFEFAFKSVYGDTLEKLTNTGLYNLLIRCLRCQKKATLQDIVLHLEPQNEIPVHTMLC  
MCCCKCEARIAFQQQLFLNTLSFVCPW.

107. (New) The method of claim 106, wherein the CIN is CIN1.

108. (New) The method of claim 106, wherein the CIN is CIN2, CIN3, or CIN2/3.

109. (New) The method of claim 106, the polymeric matrix comprises a copolymer of poly-lactide-*co*-glycolide.

110. (New) The method of claim 106, wherein the pharmaceutical composition is administered via injection.

111. (New) The method of claim 110, wherein the injection is intramuscular, subcutaneous, or intracervical.

112. (New) The method of claim 107, the polymeric matrix comprises a copolymer of poly-lactide-*co*-glycolide.

113. (New) The method of claim 112, wherein the pharmaceutical composition is administered via injection.

114. (New) The method of claim 113, wherein the injection is intramuscular, subcutaneous, or intracervical.

115. (New) The method of claim 108, the polymeric matrix comprises a copolymer of poly-lactide-*co*-glycolide.

116. (New) The method of claim 115, wherein the pharmaceutical composition is administered via injection.

117. (New) The method of claim 116, wherein the injection is intramuscular, subcutaneous, or intracervical.